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EXAMINER

GREGORY, BERNARR E

ART UNIT	PAPER NUMBER
3662	

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/925,527

Applicant(s)

VICKERS, ROGER S.

Examiner

Bernarr E. Gregory

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23, 25-62, 64-82, 85-99, 101-103 and 105-112 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31, 34-37, 74-76, 80-82, 111, 112 is/are allowed.
- 6) ☒ Claim(s) 1-22, 32, 33, 40-58, 60, 70-72, 79, 85-99, 101-103 and 105-110 is/are rejected.
- 7) ☒ Claim(s) 23, 25-30, 38, 39, 59, 61, 62, 64-69, 73, 77 and 78 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Claims 31, 34-37, 74-76, 80-82, 111, and 112 are allowable over the prior art of record.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 85-97 are rejected under 35 U.S.C. 102(b) as being anticipated by Shanley et al ('669) or Green ('388).

With respect to independent claim 85, each of Shanley et al ('669) or Green ('388) plainly shows a method that continuously produces laser pulses to scan a target in the "environment" and receives the scattered laser light from the target. In each of Shanley et al ('669) or Green ('388), the data from the received, scattered laser light is stored as claimed in claim 85. In Green ('388), please see item 64 in Figure 3. In Shanley et al ('669), please note the mention of storage of "the signals" as mentioned in the abstract of that reference.

As for the further limitations of dependent claim 86, these are fully met by either reference as applied in that the range is open-ended from about 1 microsecond and up, so that any normal measuring period inherent in either reference is within such an open-ended range. Similarly, the range of pulse durations in dependent claim 87 is fully met by either

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applied reference as being a typical range in laser environmental scanners as the ones applied in this rejection.

As for the further limitations of dependent claim 88, both applied references has a scanner as claimed. For example, please note item 51 in Figure 3 of Green ('388).

The remarks with respect to claims 89-97 are substantially those just made above with respect to claims 85-88. Further, please note that the computer processing in either of the applied references would necessitate the claimed A/D converter recited in dependent claim 91.

4. Claims 1-3, 8, 9, 12, 18, 19, 32, 4-7, 14, 40-48, 51, 56-58, 60, 53, 70, 71, 79 are rejected under 35 U.S.C. 102(b) as being anticipated by Cleveland, Jr. ('227).

With respect to independent claim 1, please note in the Abstract of Cleveland, Jr. ('227) that it may use "some combination of ... laser, or radar devices," so that both receiving steps of independent claim 1 are met by the reception of the scattered laser light and the reception of the reflected radar signal. The claim 1 "storing data ..." step is met at least by the use of item 36 in Figure 4 of Cleveland, Jr. ('227). Further, inherently the gathering of data at the "Airborne Reconnaissance Platform" and its processing at the "Friendly Unit" would make at least temporary storage necessary and inherent in the transmission and processing processes. The further limitations of dependent claims 2, 3, 8, 9, 12, and 32 are met by the remarks just made with respect to independent claim 1.

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The further limitations of dependent claims 18 and 19 are fully met by the inherent mixing in the radar receiver in Cleveland, Jr. ('227) to mix down to IF.

The remarks with respect to claims 4-7, 14, 40-48, 51, 56-58, 60, 53, 70, 71, 79 are substantially those just made above with respect to claims 1-3, 8, 9, 12, 18, 19, and 32.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10, 11, 13, 15, 16, 17, 20-22, 33, 49, 50, 52, 54, 55, 72, 98, 99, and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cleveland, Jr. ('227).

Cleveland, Jr. ('227) differs from the further limitations of dependent claims 10 and 11 in not specifying these particular wavelength ranges. It would have been obvious to one of ordinary skill-in-the-art to use a wavelength in Cleveland, Jr. ('227) on the approximate order of magnitude as the desired targets sought in reconnaissance in that this matching of wavelength to target size is old and well-known to gain the advantage of maximum target echo strength.

Cleveland, Jr. ('227) differs from the further limitations of depend claim 13 in not disclosing the use of the old and well-known Ultrawideband

radar. It would have been obvious to one of ordinary skill-in-the-art to use the old and well-known UWB radar for the well-known advantage of versatility in detection of a wide range of target sizes that would not be possible with a narrow band of transmitted frequencies.

Cleveland, Jr. ('227) differs from the further limitations of dependent claim 15 in not disclosing the use of the old and well-known antenna array as described in claim 15. It would have been obvious to one of ordinary skill-in-the-art to use the old and well-known antenna array in Cleveland, Jr. ('227) for the old and well-known advantage of beam steering without the significant additional weight of a mechanically scanned antenna.

Cleveland, Jr. ('227) differs from the further limitations of dependent claim 16 in not disclosing the use of a common antenna for transmission and reception. It would have been obvious to one of ordinary skill-in-the-art to use a common antenna for transmission and reception to gain the advantage of a lighter radar when one antenna is used instead of two antennae and to gain the additional advantage of elimination of any possible leakage problem that could occur with separate transmission and reception antennae.

Cleveland, Jr. ('227) differs from the further limitations of dependent claim 17 in not disclosing the blanking described in that claim. It would have been obvious to one of ordinary skill-in-the-art to blank as described in claim 17 to eliminate leakage.

Cleveland, Jr. ('227) differs from the further limitations of dependent claim 20 in not showing the old and well-known I and Q processing, It would have been obvious to one of ordinary skill-in-the-art to use the old and well-known I and Q processing in Cleveland, Jr. ('227) to gain the advantage of recovering phase data from the reflected radar signal.

Cleveland, Jr. ('227) differs from the further limitations of dependent claim 21 in not disclosing the old and well-known digitizing of the receiver signals. It would have been obvious to one of ordinary skill-in-the-art to digitize the received signal to gain the numerous old and well-known advantages of radar digital signal processing over analogue signal processing.

Cleveland, Jr. ('227) differs from the further limitations of dependent claim 33 in not showing the old and well-known use of the range migration algorithm. It would have been obvious to one of ordinary skill-in-the-art to use SAR radar with a range migration algorithm in Cleveland, Jr. ('227) in that it is the preferred form of radar imaging for reconnaissance.

With respect to the further limitations of dependent claims 49 and 50, please see the remarks with respect to claims 10 and 11 above.

With respect to the further limitations of dependent claim 13, please see the remarks with respect to claim 13 above.

With respect to the further limitations of dependent claim 54, please see the remarks with respect to claim 15 above.

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With respect to the further limitations of dependent claim 55, please see the remarks with respect to claim 16 above.

With respect to the further limitations of dependent claim 72, please see the remarks with respect to claim 33 above.

With respect to claims 98, 99, and 101, please see the remarks with respect to claims 10, 11, 13, 15, 16, 17, 20-22, 33, 49, 50, 52, 54, 55, and 72 above.

7. Claims 102, 103, and 105-110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serbin ('306).

Serbin ('306) differs from claims 102, 103, and 105-110 only in the recited specific ranges of wavelengths (including UWB) and in the use of an A/D converter. It would have been obvious to one of ordinary skill-in-the-art to use a range of wavelengths that is optimal for the size or sizes of targets of interest. The use of an A/D converter would be inherent in Serbin ('306) in that the disclosed processing in Serbin ('306) is digital.

8. Claims 23, 25-30, 38, 39, 59, 61, 62, 64-69, 73, 77, and 78 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernarr E. Gregory whose telephone number is (571) 272-6972. The examiner can normally be reached on weekdays from 7:30 AM to 4:00 PM.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza, can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Bernarr E. Gregory  
Primary Examiner  
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